

METHOD AND APPARATUS FOR VIRTUAL ADDRESS TRANSLATION

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Abstract of the Disclosure

A method and apparatus for virtual address translation include processing that begins by receiving a memory access request that includes a virtual address. The processing continues by determining whether a physical address translation has been performed for the virtual address. Note that a physical address translation translates the virtual address into an address. The address either corresponds to physical address of memory or is further translated into another physical address of memory. The processing continues when the address, which resulted from the physical address translation or the another physical address translation, is stored in a translation look aside table (TLB).

10 When the physical address translation or the another physical address translation has not been performed, the processing retrieves a physical page address based on a portion of the virtual address. The processing continues by determining whether the physical page address corresponds to a physical address requiring further translation (e.g., is within the AGP window). If not, the physical page address and a portion of the virtual address are

15 used to produce the physical address. If the address is within the physical address requiring further translation, a second physical page address is retrieved. Utilizing the second physical page address and a portion of the virtual address, another physical address is produced. Both the translations (i.e., the physical address and the another physical address) are stored within the same TLB of the central processing unit.

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